

WHAT IS CLAIMED IS:

1. A stand for supporting a surgical microscope, said stand comprising:

an upright column;

5 a support arm connected to said upright column for carrying said surgical microscope, said support arm being pivotable in a vertical plane;

a cable pull operatively connected to said support arm to act at a location spaced from a pivot axis of said support arm; and

10 a device for applying a constant balancing force to said support arm through said cable pull to compensate for loading associated with said surgical microscope; and  
at least one deflecting roller mounted on said stand for redirecting said cable pull in a direction parallel to said upright column for connection to said device.

2. The stand according to Claim 1, further comprising a generally horizontal arm

15 linking said pivotable support arm to said upright column, and wherein said at least one deflecting roller redirects said cable pull to extend at least closely along a vertical axis of said upright column.

3. The stand according to Claim 2, wherein said at least one deflecting roller redirects

20 said cable pull to extend within said upright column.

4. The stand according to Claim 1, further comprising a counterbalancing transmission having a transmission element for connecting said cable pull to said support arm, wherein said cable pull is fixed to said transmission element.

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5. The stand according to Claim 1, further comprising a counterbalancing transmission having a movable transfer element coupled to a transmission element for connecting said cable pull to said support arm, wherein said cable pull is fixed to said transfer element.

6. The stand according to Claim 5, further comprising a basic body to which said support arm is pivotably mounted, wherein said transfer element is a carriage mounted on said basic body for displacement relative to said basic body.

5 7. The stand according to Claim 5, further comprising a basic body to which said support arm is pivotably mounted, wherein said transfer element is a bracket mounted on said basic body for displacement relative to said basic body.

10 8. The stand according to claim 5, wherein said transmission element is adjustable in its position with respect to said transfer element.

9. The stand according to claim 8, wherein said transmission element is adjustable in its position with respect to said transfer element by means of a spindle.

15 10. The stand according to Claim 1, wherein said device for applying a constant balancing force comprises a balance weight.

11. The stand according to Claim 10, further comprising a block and tackle for suspending said balance weight.

20 12. The stand according to Claim 11, wherein said balance weight is arranged such that it can move freely vertically within said upright column.

25 13. The stand according to Claim 11, wherein said balance weight is arranged such that it can move freely vertically alongside said upright column in close proximity to said upright column.

14. The stand according to claim 13, further comprising a low-friction bearing for guiding said balance weight along said upright column.
15. The stand according to claim 9, further comprising means for automatically driving said spindle to cause adjustment.
16. The stand according to claim 15, wherein said means for automatically driving said spindle comprises an electric motor.
- 10 17. The stand according to claim 15, wherein said means for automatically driving said spindle comprises an electromagnetic drive.
18. The stand according to claim 15, wherein said means for automatically driving said spindle comprises a hydraulically actuated drive.
- 15 19. The stand according to claim 15, wherein said means for automatically driving said spindle comprises a pneumatically actuated drive.
20. The stand according to Claim 15, wherein said means for automatically driving said spindle includes a brake.
21. Stand according to claim 15, wherein said means for automatically driving said spindle is computer-controlled.
- 25 22. The stand according to claim 21, further comprising a measuring sensor associated with said support arm for determining a change in load, wherein output data from said measuring sensor is used for controlling said spindle adjustment.

23. The stand according to claim 1, further comprising an equipment box arranged on said upright column, whereby said equipment box acts as a stabilizing weight for said stand.
- 5    24. The stand according to claim 1, further comprising a generally horizontal arm linking said pivotable support arm to said upright column, wherein said horizontal arm can be pivoted in a horizontal plane on said upright column and said horizontal arm mounts said support arm on said stand such that said support arm can be pivoted in a horizontal plane.
- 10    25. The stand according to claim 24, wherein said cable pull is interrupted at least once by a rotational decoupling means for preventing torsion in said cable pull.
- 15    26. The stand according to claim 24, wherein said cable pull includes a torsion-tolerant cable.
27. The stand according to claim 1, wherein said cable pull is interrupted by a step-up or step-down transmission.
- 20    28. The stand according to Claim 27, wherein said step-up or step-down transmission comprises at least two deflecting rollers firmly connected to each other so as to rotate with each other, said at least two deflecting rollers having different diameters.
- 25    29. The stand according to claim 1, further comprising a balance arm rigidly connected to said support arm and a sliding pad displaceably arranged on said balance arm, wherein said cable pull is fixed to said sliding pad.

30. The stand according to Claim 29, wherein said sliding pad can be adjusted by means of a spindle in terms of its position along said balance arm.

31. The stand according to claim 2, wherein the position of said at least one deflecting 5 roller is adjustable by means of a spindle.

32. The stand according to Claim 5, further comprising a basic body to which said support arm is pivotably mounted, wherein said transfer element is a carriage between said counterbalancing transmission and said at least one deflecting roller, said carriage 10 being mounted such that it can be displaced with respect to said basic body and serving to transmit force between said cable pull and said counterbalancing transmission.

33. The stand according to Claim 10, wherein said balance weight comprises at least two partial weights.

15 34. The stand according to claim 1, wherein said cable pull comprises two parallel cables.

35. The stand according to Claim 34, wherein said two parallel cables have opposite 20 winding directions.